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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/871,752	06/01/2001	Takeshi Omatsu	SAEGU82.001AUS	1632

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KNOBBE MARTENS OLSON & BEAR LLP  
2040 MAIN STREET  
FOURTEENTH FLOOR  
IRVINE, CA 92614

EXAMINER
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SIEFKE, SAMUEL P

ART UNIT	PAPER NUMBER
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1743

DATE MAILED: 02/07/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 09/871,752	<b>Applicant(s)</b> OMATSU ET AL.	
	<b>Examiner</b> Samuel P. Siefke	<b>Art Unit</b> 1743	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 18 November 2005.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1,2 and 4-7 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,2 and 4-7 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-7 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 1 recites "dissolving a film-forming polymer" and refers this to the overcoat layer. The film forming polymer should be an overcoat forming polymer.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-7 are rejected under 35 U.S.C. 102(b) as being anticipated by JP 11-140360.

JP '360 teaches an ozone detector with a substrate containing a color change layer and a non-color change layer, where at least part or whole of the color-change layer is exposed to ozone during used. The color change layer comprises an anthraquinone dye and a cationic surfactant, such as a quaternary ammonium salt (alkyltrimethylammonium salt; abstract). It is inherent that in the detector described in the reference, the non-color changing layer (no coloring agent) must necessarily "overcoat" the color-changing layer, at least partially (abstract; page 2, para. 13). There is essentially no difference between the claimed invention and the teachings of the reference. JP '360 further discloses that the anthraquinone dye has at least one amino group species selected from the class consisting of primary and secondary amino groups (abstract; page 2, para 12). The quaternary ammonium salt is an alkyltrimethylammonium salt (abstract). The ozone sensitive ink further contains an extender (page 3, para. 17 and 19) or resinous binders (page 3, para. 17 and 18). The ozone sensitive ink further contains a color component which does not change color in an ozone atmosphere (page 4, para. 25). Regarding the overcoat layer being made of a film-forming polymer, JP '360 discloses the overcoat layer comprising a ethylcellosolve (ethyl cellulose) as the main component in the layer (page 5, example 1) and includes a solvent when making the layer. It is noted that the applicant recites limitations on the manner in which the overcoat layer is made, such limitations are not attributed patentable weight in claims directed to a device. JP '360 further states that

the color change layer and a non-color change layer can be made out of the same composition. Therefore the non-color changing layer is made of ethyl cellulose. In the applicant's specification on page 13, ethyl cellulose is a water soluble polymer that can be used for the overcoat layer.

Claims **1-7** are rejected under 35 U.S.C. 102(e) as being anticipated by Omatsu (USPN 6,117,685).

Omatsu discloses an ozone detector that comprises a substrate containing a color-change layer and a non-color change layer, where at least part or whole of the color-change layer is exposed to ozone during used (col. 2, lines 21-26; col. 2, lines 59-65). The color-change layer comprises an anthraquinone dye and a cationic surfactant, such as a quaternary ammonium salt. It is inherent that in Omatsu the non-color changing layer must necessarily "overcoat" the color-changing layer, at least partially. There is essentially no difference between the claimed invention and the teachings of the reference. The anthraquinone dye has at least one amino group species selected from the class consisting of primary and secondary amino groups (col. 5, lines 53-58). The quaternary ammonium salt is an alkyltrimethylammonium salt (col. 6, lines 23-34). The ozone sensitive ink further contains an extender (col. 6, lines 42-45 and lines 53-60) or resinous binders (col. 6, lines 42-52). The ozone sensitive ink further contains a color component which does not change color in an ozone atmosphere (col. 7, lines 23-28). The overcoat layer does not contain a coloring agent (col. 3, lines 1-11). Regarding the overcoat layer being made of a film-forming polymer, Omatsu discloses the overcoat layer comprising a ethylcellosolve (ethyl cellulose) as the main component

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in the layer (col. 8, lines 48-50) and includes a solvent when making the layer. It is noted that the applicant recites limitations on the manner in which the overcoat layer is made, such limitations are not attributed patentable weight in claims directed to a device. Omatsu further states that the color change layer and a non-color change layer can be made out of the same composition. Therefore the non-color changing layer is made of ethylcellulose. In the applicant's specification on page 13, ethyl cellulose is a water soluble polymer that can be used for the overcoat layer.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 1-7 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over JP 11-140360.

JP '360 teaches an ozone detector with a substrate containing a color change layer and a non-color change layer, where at least part or whole of the color-change layer is exposed to ozone during used. The color change layer comprises an anthraquinone dye and a cationic surfactant, such as a quaternary ammonium salt (alkyltrimethylammonium salt). It is inherent that in the detector described in the reference, the non-color changing layer must necessarily "overcoat" the color-changing layer, at least partially. The only difference between the claimed invention and the teachings of the primary reference is the Applicant describes the indicator as containing an overcoat over the color-change layer containing the dye and the detergent.

Therefore, in view of the differences between the subject matter as a whole sought to be patented and the totality of the teachings of the prior art, as established above, it would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains, to follow the teachings of JP 411140360 and claim the same structure for the ozone detector as containing an overcoat over the ozone detector layer, because it is a conventional practice in any detection method or product to provide an inert overcoat on the sensitive layer until the test is done. It would have been obvious to one of ordinary skill in the art to protect the ozone-sensitive layer from exposure to the atmosphere, until the layer is ozone in the test area. With respect to the overcoat layer comprising a film-forming polymer (polyvinyl alcohol), it would have been obvious to one having an ordinary skill in the art at the time the invention was made to modify JP '360 to use a polymer composition as the overcoat layer because polymers provide excellent durability when

exposed to the elements and also because it is known in the art to use polymers for overcoat layers.

### ***Response to Arguments***

Regarding the overcoat layer being made of a film-forming polymer, the prior art discloses the overcoat layer comprising an ethylcellosolve (ethyl cellulose) as the main component in the layer (specific references can be seen in each rejection) and includes a solvent when making the layer. It is noted that the applicant recites limitations on the manner in which the overcoat layer is made, such limitations are not attributed patentable weight in claims directed to a device. The prior art further states that the color change layer and a non-color change layer can be made out of the same composition. Therefore the non-color changing layer is made of ethylcellulose. In the applicant's specification on page 13, ethyl cellulose is a water soluble polymer that can be used for the overcoat layer.

### ***Conclusion***

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the



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shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Samuel P. Siefke whose telephone number is 571-272-1262. The examiner can normally be reached on M-F 7:00am-5:00pm.

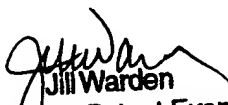
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jill A. Warden can be reached on 571-272-1700. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Sam P. Siefke



February 3, 2006



Jill Warden  
Supervisory Patent Examiner  
Technology Center 1700